2 Sheets—Sheet 1.

O. T. EARLE.

Means for Applying Bands to Hose, &c.

No. 225,216. **Patented Mar. 9, 1880.**

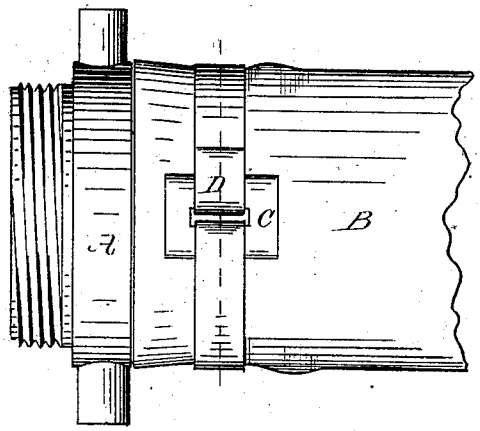


Fig. 1.

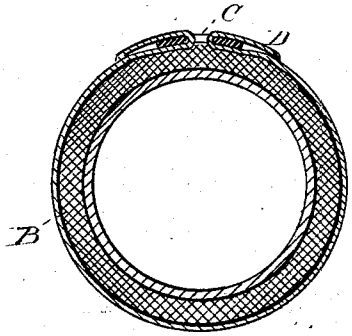


Fig 2

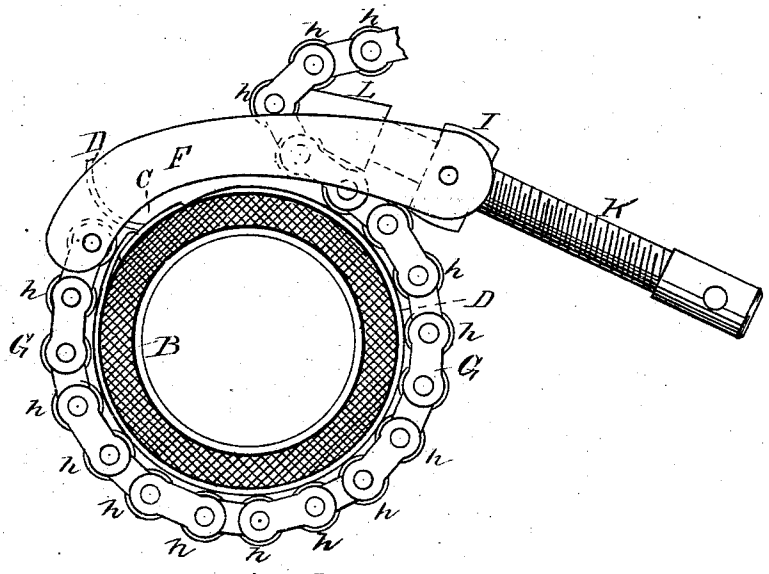


Fig. 3.

WITNESSES

L. M. Davis.

A. L. Aldrich

INVENTOR

Oscar T. Earle

by his attys

Clarke & Raymond.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

2 Sheets—Sheet 2.

O. T. EARLE.

Means for Applying Bands to Hose, &c.

No. 225,216. Patented Mar. 9, 1880.

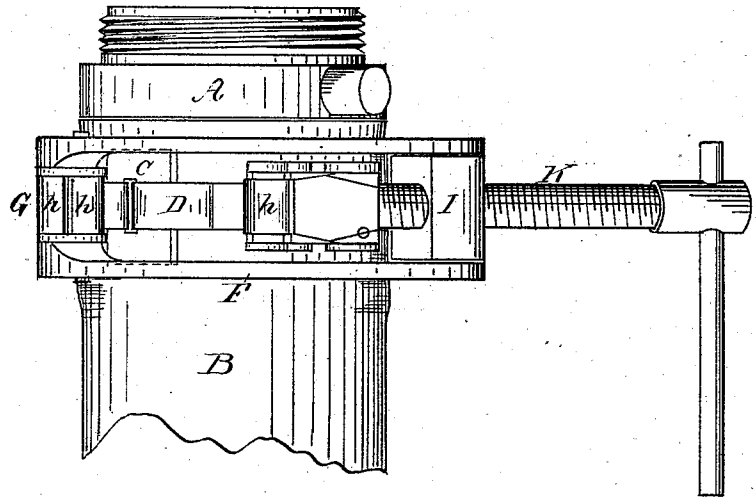


Fig. 4.

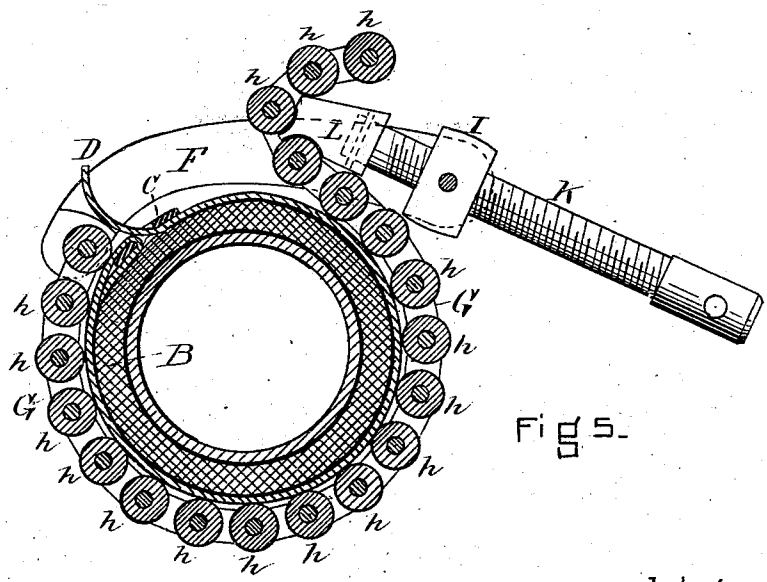


Fig. 5.

WITNESSES

L. M. Davis.

A. L. Aldrich

INVENTOR

Oscar T. Earle

by his Attys

Clarke & Raymond.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

OSCAR T. EARLE, OF MILFORD, CONNECTICUT, ASSIGNOR TO F. F. RAYMOND, 2D, TRUSTEE, OF NEWTON, MASSACHUSETTS.

MEANS FOR APPLYING BANDS TO HOSE, &c.

SPECIFICATION forming part of Letters Patent No. 225,216, dated March 9, 1880.

Application filed January 12, 1880.

To all whom it may concern:

Be it known that I, OSCAR T. EARLE, of Milford, in the county of New Haven, and in the State of Connecticut, have invented an Improvement in Means for Applying Bands to Hose, &c., of which the following is a specification.

In the drawings, Figure 1 is a plan of the hose, coupling, and band. Fig. 2 is a cross-section thereof. Fig. 3 is a view, in elevation, representing the tool for applying the hose and a cross-section of the coupling, hose, and band. Fig. 4 is a plan of the said tool, showing its position in relation to the hose in applying the band. Fig. 5 is a vertical section thereof.

In a pending application I have shown and described a metal band which is particularly adaptable for fastening hose to couplings or tubes or other flexible cylindrical article to an interior cylindrical body, and this invention relates to the means which I prefer to employ in applying the same.

A represents the coupling, formed in the usual manner, of metal, and properly prepared on its exterior to receive the flexible hose B and the band for uniting the same to it.

In order to confine the coupling and hose together, it has been customary heretofore to wrap them with wire, or, in the case of large hose, to put around it a hinged collar or a pair of collars provided with ears, through which is inserted a bolt, by which the sides of the collar are drawn together to compress the flexible hose upon the coupling.

The improvement which I originally made in hose-bands was well adapted to small hose, and was also serviceable for the larger kind of hose, but did not call for any especial means for applying it. In the improvement, however, described in my pending application filed December 8, 1879, it is essential that means, substantially as hereinafter described, should be used in applying the band for fastening the hose to the coupling or other flexible cylindrical article to the body to which it is to be secured.

The hose-band consists of the burr C and the strap D. A hook is formed on one end of the strap D, which is slipped over one side of the burr C, and the free end of the strap is so adjusted as to lie next the hose B at a point about the middle of the neck of the coupling, which should be made in the usual way, either corrugated along the whole length, as is usual in small couplings, or beaded at its inner end. The strap D is then passed through the other side of the burr C and tightly drawn up, so as to embed itself in the hose and compress the hose firmly upon the neck of the coupling. The burr is a piece of metal with a suitably-shaped hole pierced in it to receive the band.

The tool which I employ in applying the band, and which is the subject of this specification, is composed of a flexible strap or chain, G, adapted to surround the coupling and to be drawn together by a screw or other power, so as to shorten the band by continuous pressure upon its exterior surface and embed it in the compressible material of the hose itself, thereby bringing it into close contact with the neck of the coupling and allowing the free end of the band to be drawn through and turned back over the burr.

F is a yoke, to which the strap or chain G is attached, and the strap or chain is provided with abutments, in this case consisting of the rolls *h* of the ordinary lathe-chain. At the other end of this yoke is pivoted a nut, I, through which works the hand-screw K, carrying on its end a swiveled jaw, L, to take hold of the abutments referred to in the flexible strap.

The way this mechanism is used in applying one of the bands referred to is as follows: The hose being slipped upon the coupling, a burr having a strap attached to it is properly placed, and the free end of the strap bent around the hose and passed through the burr upward. The flexible band G of the apparatus is then put around the hose and the abutment *h* is engaged with the jaw L. The burr should be adjusted so as to come beneath the yoke, the end of the yoke to which the chain is fastened being placed over the edges of the burr. Upon tightening the screw it will be seen that the burr is itself drawn down upon the hose. The band D is then compressed by the chain, or its equivalent, into and upon the

hose throughout the entire circumference of the hose, and will thus be shortened by the traverse of the chain or strap over it, and will be forced up at its free end through the burr. When a sufficient amount has been protruded through the burr the free end is turned down and clinched by hammer or otherwise, and the screw being loosened it will be found that the hose is tightly banded to the coupling.

By this apparatus referred to a sufficient strain can be brought to bear upon the exterior of the hose over the band to crush the neck of the coupling itself, and consequently it is very evident that it is easy with this simple device to repair with these bands a large piece of hose, which may happen to burst on occasion of a fire in the street, simply by cutting off the broken part of the hose and reinserting the coupling or a short metal tube.

It will be seen that this tool differs materially from the tools described in my former patent, and is applicable to bands which have no projections for the engagement of the jaws in order to draw the band tightly upon the hose, and that by the aid of this tool a much greater range of sizes can be applied with one instrument, and also that the compression of the band upon the hose and with its substance is much more uniform, and does not depend at all upon the stretch of the material of the band.

It will be observed, also, that the device herein described can be used in applying a band of any description over a hose and coupling, or upon any cylindrical surface where it is necessary to compress the same upon it throughout its entire length, as herein described.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

As a means for banding compressible articles with flexible metallic bands, the combination of the yoke F, the flexible band G, provided with abutments, and means for shortening said band, said apparatus being applied and used over the place where the metallic band and burr, or their equivalents, are applied, substantially as described.

OSCAR T. EARLE.

Witnesses:
F. F. RAYMOND, 2d,
A. J. OETTINGER.